C-doping cell for MBE

MBE Komponenten has launched SUKO-D, its next generation carbon doping cell for p-type doping of MBE grown GaAs/AlGaAs.

It was redesigned in collaboration with Prof Wegscheider, of Germany's University Regensburg.

Using a high mobility MBE system, Wegscheider achieved record hole mobilities of $1.2x10^6$ cm^2/Vs in GaAs/AlGaAs quantum wells at a carrier density of $2.3x10^{11}cm^{-2}$.

The quality of the ultra high mobility electron heterostructures was not affected by the use of the new cell.

The cell uses a directly heated, pre-conditioned high purity pyrolytic graphite filament, providing minimal heat load in the MBE system. This prolongs the lifespan of the filament.

SUKO-D is compatible with all commonly used MBE systems, and is well suited for extremely high bulk doping levels up to $10^{20}cm^3$, sharp delta doping layers, modulation doping and low resistance p-type contact formation. It allows fast temperature ramping and flux switching without any memory effect in the system.

Applications range from MBE growth of III/V heterostructures for basic research to electronic and optoelectronic device fabrication, such as high power laser diode growth.

SUKO-D for p-type doping of MBE grown GaAs/AlGaAs.

Installation completed

Germany's Fraunhofer Institute for Applied Solid State Physics, IAF has completed the installation of a Riber Epineat small scale MBE production system.

Installed in the Epitaxy Department, the system will be used to develop CdHgTe epitaxial layer structures for infra-red detector devices, in a project partnership with AIM Infrarot-Module GmbH.

Epineat is a multi-wafer machine for development and pilot production of emerging compound based devices. It can grow on single 4" wafers. The system has up to nine source ports, one auxiliary source port and in-situ characterisation capabilities.

Hydride generator accessory

Thermo Electron Corporation has introduced its new hydride generator accessory, the VP100.

Based on the continuous flow vapour principle, the accessory enhances the capabilities of Thermo's M and S series Atomic Absorption (AA) spectrometers, allowing high sensitivity vapour analysis to be performed. It is targeted at AA spectrometer users as an alternative to graphite furnace instruments for some environmentally significant elements.

VP100 allows AA spectrometers to determine elements that can form gaseous hydrides or, in the case of mercury, a mono-atomic vapour. These include arsenic, selenium, bismuth, tellurium, antimony, tin, lead and mercury.

With its continuous flow design, the new accessory produces a steady state signal, which is integrated to provide measurement precision.

In addition, the continuous flow of samples and reagents produces a self-cleaning action that reduces memory effects and improves sample throughput.

JM's V-Purge for MOCVD granted patent

Johnson Matthey's Gas Purification Technology division has been granted US patent number 0182239 A1 for its V-Purge Hydrogen Purification System.

The system, for purging hydrogen from palladium (Pd) membrane purifiers, ensures total hydrogen removal in the event of power outages and emergency shutdowns. It was designed specifically to meet the needs of large MOCVD production platforms.

V-Purge removes all the hydrogen in the cell prior to the cell cooling below 300° C, the temperature limit at which significant stresses on the membrane can occur if hydrogen is present. When automatic purge is activated, a complete purge can be achieved in less than 10 minutes. The system can also switch from full nitrogen purge to full hydrogen flow up to 200 slpm in a minute, while maintaining the cell temperature within +/-5° C.

AXT cut to save

AXT Inc has reduced its workforce in Beijing, China by approximately 100 positions, or 15%.

Staff reduction is part of the company's ongoing efforts to reduce costs and bring capacity in line with market demand. The company will record a restructuring charge of approximately $0.1m in Q1. Annually, the company anticipates payroll and related expense savings of $0.3m.